 1973

ELANA

The history of the Works

The increase of the worlds and Polands population causes a growing demand not only for agricultural but also for industrial products. A lack of natural raw materials is felt more and more by the industry.
Chemistry, equipped with a most modern technology takes an enormous part in meeting these demands. Under these circumstances chemical substitutes of natural raw materials possess a fundamental significance and favourably influence our trade balance.
Such a propitious atmosphere and dynamic growth of the chemical industry is followed by the decision to build the Polyester Fibre Works at Toruń, the location of which was warranted, among others, by a surplus of available labour force and by a technical research centre (Kopernik University — Secondary Technical Schools).

In December 1963 we obtained the first kilograms of staple fibres called "Elana", the production of which was based on the English licence of Imperial Chemical Industries.
In the first year the production of Elana amounted to 3025 tons. The size of the production and the variety of the assortment of the produced fibres grew as and when new production objects (sites) were introduced. As such, after 2 production lines of the "Torlen" polyester rayon were introduced in 1967, the production of the badly wanted kind of fibre was commenced in the same year and 300 tons were delivered for home consumption.
The intense development of the works and the size of production in the particular years is illustrated by the following figures:

Years	*Elana*	*Torlen*
1967	11280	314
1968	13852	1649
1969	15765	2579
1970	16062	4053
1971	18635	5900
1972	19619	6780

The Polyester Fibre is a product of a synthesis of a derivative of petroleum. The basic raw material is a methyl ester of terephtalic acid, shortly called DMT. A great rise in the production called for securing a corresponding quantity of this raw material. With due regard to this situation it was decided in 1966 to build a DMT factory. The building was started in 1967 based on the licence of Krupp-Witten (West Germany). This factory having a production capacity of 15.000 tons started its production early in 1971. The works were freed from a costly and troublesome import of raw materials and a base was formed for a further rise in production.

The use of polyester fibres

The polyester fibres owing to their extremely favourable application capacity, are widely used.
As such the continuous filaments are used for the production of knitted ware and fabrics (blouses, neckties, underwear, men's shirts, socks, sweaters). They are also used for the production of sewing threads, blinds (curtains), prothesis, blood vessels, material for tents (tarpaulins), driving belts, band conveyors, protective clothing as well as filtering mediums, fire hoses, tyre cords.
The staple fibre is used in its pure condition as well as in mixtures with natural and artificial fibres. As such it is used for the manufacture of garments, underwear, rainproof ma-

terials, fancy materials, upholstering materials as well as for the manufacture of carpets and synthetic leather, filtering mediums.
The texturized continuous filaments deserve attention owing to their nice appearance, great heat absorbing capacity and lightweight. The Polyester Polymer is an excellent raw material for manufacturing foil which due to its properties is used in the electroengineering and radio-electronic industry.

Development of the Works

2-nd Extension

It was decided to extend the Polyester Fibre Works calling it 2-nd Extension ZWS "ELANA" owing to the great demand of sur market and the attractiveness of goods made from polyester fibre. The extension will be effected in the years 1971—1976.
The technical and economic presumptions concerning the 2-nd extension have in view the following rise in production in 1976:

staple fibre	150%
continuous fibre	230%
DMT	400%

The limits of the investments will be as follows:

- intensification of the present machine stock
- building of new production plants
- building of new power systems

and the seizure of water for Toruń and Inowrocław. About 30 different building contractors are engaged with the building of the Works. The building will be effected as set down by the General Investment Producer through the Designing Office of PWS at Łódź.

According to the agreement made between the General Investment Producer and the investor, the "Elana" Works will train the staff, will take part in trials on the whole and effect the starting of technological systems and equipment. The staff makes every endeavour to shorten the cycle of starting the technological system and to shorten the period of achieving full production capacity.
In accordance with the directions for development of the line it was decided to build a 3-rd extension of the "Elana" Works where a 20.000 tons rise in production of the continuous filament yarn is planned. Building period 1975—1980.

Intensification

The demand for polyester fibres is steadily growing, hence a new licence was bought from ICI in order to enlarge and modernize the Chemical Department and Staple Fibre Department.
The intensification of the Chemical Department, divided into 2 stages should cause, in the first stage, a production increase of about 20% in the yearly scale. The second stage refers chiefly to technological problems in consequence of which the production will be increased by further 20%. The modification of the present equipment and the starting of new production lines in the Staple Fibre Department will cause in 1975 an increase in production of the fibre by 130% as compared with the past years production. Apart from the gains in quantity, the quality of the fibre produced will be improved due to technological improvements which means a lot to our customers, who will be able to produce bigger quantities of better quality cloth and knitted fabrics. We may mention here that according to the new licence which includes also a technology for producing a new, highly resistant fibre, hitherto not known over here, for making threads and technical fabrics.

Export

It should be remembered that the chief task is to cover the demande of the home market, however, in the interest of the national economy, the highest possible quantity of fibres should be exported. The Polish polyester fibre is already well known and is utilized first of all in Great Britain, Yugoslavia, Sweden, France, Switzerland and Hungary.
In 1967 we have already exported 2350 tons. The present years export will amount to about 2800 tons.
During the period of the 3-rd extension (the 1980 years) we expect to export about 18.000 tons of fibres.

Technical progress

The "Elana" Staple Fibres and the "Torlen" Continuous Fibres have reached, as far as the quality is concerned, a medium European Standard. It is our ambition to widen the present production assortment apart from improving the quality of the present day production in order to meet the ever growing demands of our customers. As such, we are working upon new fibre types which subsequently will be produced. We are anxious to improve the utility capacity of the fibres produced up till now with a view to substitute fully the deficit caused by imported natural raw materials such as wool, cotton, silk etc. The following positions of the technology to be introduced for production will be as under:

- profiled fibre
- fibres dyed in various colours
- fibres of a greater thickness
- technical staple fibres (highly resistant)

To the above assortment the production of profiled fibres were

added with the so-called "lumen" having a number of valuable merits, viz.:

- a better thermal insulation
- the possibility of getting luminous effects in ready goods
- a smaller inclination to "pilling"
- a greater fluffiness of the yarn.

Thanks to thicker fibres, our carpet industry will be in a position to produced decorative (patterned) and elastic carpets of a greater durability and comfort.

As far as technical fabrics are concerned, these are widely used abroad as well as in Poland thanks to their merits, i.e. great strength, fastness to chemicals (chemical resistance), moisture, bacteria, light and heat.

Owing to the above merits, the technical polyester fibres are irreplaceable while producing ship's ropes, fishing nets, driving-, and transporting belts, fire hoses, motor car safety belts and all sorts of technical fabrics.

Owing to present research works carried on by "Elana's" Research Base, the needs of our customers will be fully met when the market will be supplied with attractive, durable and with cheaper goods as compared with the imported ones.

Social- and accommodation problems

Simultaneous with the building of the works, the social and accommodation problems were accomplished as a result of which the Works have gained the following social establishments:

- a Work's Settlement including 8 blocks of flats
- with one sky-scraper of 10 floors
- one Workmen's Hotel with 100 accommodations
- one Work's Canteen

two Recreation Centres with 400 accommodations
one of which is situated at the sea-side (290 accommod.)
two Nursery Schools for 260 children
one Recreation Centre at Wejherowo for 350 children
one Preventorium to serve the whole staff.

The building program for 1972—76 comprises the building of

1 third Nursery School for 120 children
1 Nursery for 80 children
1 Centre for recreation on Sundays
1 Sport's Hall with a covered swimming pool
1 Work's Canteen
1 Workmen's Hotel
1 Chemist's House

and the enlargement of the present recreation base.

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ELANA